

JS 9/13/21

RJA 2/17/22

## Fate Report for Case # P-18-0324

### Fate

### Summary Statement

Fate P-18-0324

**Summary FATE:**

**Statement:** MW = [REDACTED] with [REDACTED] < 500 and [REDACTED] < 1000

Solid

S =

Reacts

Hydrolysis half-life = min-hr

VP < 1.0E-6 torr at 25 °C

(E)

BP > 400 °C (E)

H < 1.00E-8 (E)

POTW removal (%) = PMN

90-99 via hydrolysis; then Hyd Pdt 90 via sorption

Time for complete

ultimate aerobic biodeg = Hyd Pdt > mo

Sorption to soils/sediments =

Hyd Pdt v.strong

PBT Potential: PMN P1B1; Hyd Pdt P3B1

FATE:

Migration to ground water = Hyd Pdt negl

PMN Material:

Overall

wastewater treatment removal is 90-99% via rapid hydrolysis of the parent compound (hydrolysis half-life: minutes to hours).

PMN

Material:

Low Persistence (P1) is based on the rapid hydrolysis of the parent compound (hydrolysis half-life: minutes to hours).

Low

Bioaccumulation potential (B1) is based on the rapid hydrolysis of the parent compound (hydrolysis half-life: minutes to hours).

Hydrolysis

Product:

Overall wastewater treatment removal is 90% via sorption.

Sorption to sludge is strong based on data for compounds with large molecular volume.

Air Stripping (Volatilization to air) is negligible based on data for compounds with large molecular volume.

Removal by

biodegradation in wastewater treatment is negligible based on data for compounds with large molecular volume.

The aerobic aquatic biodegradation half-life is greater than months based on data for compounds with large molecular volume.

The anaerobic aquatic biodegradation half-life is greater than months based on the aerobic biodegradation half-life. The anaerobic biodegradation half-life is projected to be greater than or equal to the aerobic biodegradation half-life.

Sorption to soil and sediment is very strong based on data for compounds with large molecular volume.

Migration

to groundwater is negligible based on data for compounds with large molecular volume.

Hydrolysis Product:

High Persistence (P3) is based on the estimated aerobic and anaerobic biodegradation half-lives.

Low Bioaccumulation potential (B1) is based on large predicted molecular volume, which limits bioavailability and inhibits biodegradability.

Bioconcentration/Bioaccumulation factor to be put into E-Fast: N/A.

**CBI:** [REDACTED]

**Fate** Lynch, David

**Assessor:**

**SMILES:** [REDACTED]

## Physical Properties

Property	Measured/Calculated Value	EPI
<b>Molecular Form:</b>	[REDACTED]	
<b>Molecular Wt.:</b>	[REDACTED]	
<b>% &lt; 500:</b>	[REDACTED]	
<b>% &lt; 1000:</b>	[REDACTED]	

Property	Measured Value	Method	Estimated Value	Method	EPI
Melting Point:					
Boiling Point:			>400		
BP					
Pressure:					
Vapor Pressure:			<0.000001		
Water Solubility:			Reacts		
Log P:					
Log Kow:					
Log Koc:					
Log BCF:					
Henry's Law:					
pH:					
pH					
Comment:					

### Fate Analysis

Hydrolysis (t1/2, da):	Volatilization (t1/2) - River (hr):	Volatilization (t1/2) - Lake (da):
Atm Ox Potential (t1/2)OH (hr):	Atm Ox Potential (t1/2)O3 (hr):	Atm Ox Potential (t1/2) Total (hr):
MITI Linear:	MITI NonLinear:	
Biodeg Linear:	Biodeg NonLinear:	
Biodeg Survey ult:	Biodeg Survey Prim:	
STP (% removal) Total:	STP (% removal) Biodeg:	
STP (% removal) Ads:	STP (% removal) Air:	

### Rationales

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**Removal in  
Wastewater  
Treatment:  
Atmospheric  
Oxidation:  
Hydrolysis:  
Photolysis:  
Aerobic  
Biodegradation:  
Anaerobic  
Biodegradation:  
Sorption  
to Soil and  
Sediment:  
Migration to  
Groundwater:  
Persistence - Air:  
Persistence  
- Water:  
Volatilization  
from Water:  
Soil:  
Sediment:  
Other:  
Standard:  
Bioaccumulation:**

### PBT Ratings

Persistence	Bioaccumulation	Toxicity	PBT Comments
1	1		PMN
3	1		Hyd Pdt

### Exposure-Based Testing

Exposure-Based Testing:
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### Fate Ratings

**Removal in WWT/POTW  
(Overall):**

**Removal in 90-99;90 PMN;Hyd  
WWT/POTW Pdt  
(Overall):**

Condition	Rating Values	Rating Description				Comment
		1	2	3	4	
<b>WWT/POTW Sorption:</b>	;3	Low	Moderate	Strong	V. Strong	PMN;Hyd Pdt
<b>WWT/POTW Stripping:</b>	;4	Extensive	Moderate	Low	Negligible	PMN;Hyd Pdt
<b>Biodegradation Removal:</b>	;4	Unknown	High	Moderate	Negligible	PMN;Hyd Pdt
<b>Biodegradation Destruction:</b>		Unknown	Complete	Partial	—	
<b>Aerobic Biodeg Ult:</b>	;4	<= Days	Weeks	Months	> Months	PMN;Hyd Pdt
<b>Aerobic Biodeg Prim:</b>		<= Days	Weeks	Months	> Months	
<b>Anaerobic Biodeg Ult:</b>	;4	<= Days	Weeks	Months	> Months	PMN;Hyd Pdt
<b>Anaerobic Biodeg Prim:</b>		<= Days	Weeks	Months	> Months	
<b>Hydrolysis (t1/2 at pH 7,25C) A:</b>	1-2	<= Minutes	Hours	Days	>= Months	
<b>Hydrolysis (t1/2 at pH 7,25C) B:</b>		<= Minutes	Hours	Days	>= Months	
<b>Sorption to Soils/Sediments:</b>	;1	V. Strong	Strong	Moderate	Low	PMN;Hyd Pdt
<b>Migration to Ground Water:</b>	;1	Negligible	Slow	Moderate	Rapid	PMN;Hyd Pdt
<b>Photolysis A, Direct:</b>		Negligible	Slow	Moderate	Rapid	
<b>Photolysis B, Indirect:</b>		Negligible	Slow	Moderate	Rapid	
<b>Atmospheric Ox A, OH:</b>		Negligible	Slow	Moderate	Rapid	
<b>Atmospheric Ox B, O3:</b>		Negligible	Slow	Moderate	Rapid	

**Bio****Comments:**

<b>Bio</b> <b>Comments:</b>	<div>[REDACTED]</div> <div>[REDACTED]</div> <div>[REDACTED]</div> <div>[REDACTED]</div> <div>[REDACTED] Hydrolysis may be inhibited by low water solubility.</div>
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**Fate Comments:**

<b>Fate Comments:</b>
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**Comments/Telephone Log**

Artifact	Update/Upload Time
[REDACTED]	[REDACTED]